

REMARKS

The Examiner has rejected claims 37 through 45 on the ground that the teachings of the Wang '024 Patent in view of the Parker '830 Patent makes the claimed subject matter obvious under Sec. 103.

Applicant has provided a new set of claims 46 through 49 to more particularly point out the combination of features and values of the application as currently claimed.

The Wang '024 patent, and all other references, fail to disclose Applicant's approach toward adapting the use of a radiopaque filler while creating or maintaining a soft distal end portion and a stiffer proximal end portion in a catheter shaft. There is a trade-off between shaft polymer hardness (flexibility) and required radiopacity, which requires hardness inducing radiopaque filler, so as to provide a desired combination of softness, strength, flexibility and radiopacity across the length of the catheter. This trade off includes at least:

(a) selecting the plastic material and the desired by-weight loading of the plastic material for the proximal portion of the shaft to obtain a desired range of hardness and radio-opacity, and

(b) selecting the plastic material and the desired by-weight loading of the plastic material for the distal portion of the shaft to obtain a second desired range of hardness that is significantly less than the hardness of the proximal portion of the catheter, while exhibiting an increased level of radio-opacity.

The combination of required ranges is not taught by the prior art. Applicant has provided a teaching of filler weight ranges and plastic hardness ranges that permits an effective design of catheters which require an intermediate transition zone with variable flexibility.

Accordingly, Applicant has included in the new set of claims, those ranges which

Applicant teaches are important to obtain the combination characteristics of: (a) high proximal burst strength, (b) a transition zone with high assurance against rupture or delaminating, and (c) a soft yet readily visible radiopaque distal zone.

It should be noted that support for the specific combination of ranges set forth in the claims may be found in FIGs. 3A and 3B and more particularly in the specification at paragraphs 043 and 045.

The primary reference applied by the Examiner is the Wang Patent No. 6,648,024. Wang teaches a catheter shaft wherein the distal and proximal sections have first and second stiffness and in which there is a transition section where the materials of the first and second sections are blended to provide a transition zone. Much of the detailed teachings in the Wang '024 Patent are to the technique for achieving the blend of the two durometer materials in the intermediate zone. It must be noted that neither of the cited referenced teach how that filler may be apportioned between the proximal and distal portions of the shaft so as to be distributed throughout the transition segment of the shaft, as currently claimed. Wang '024 does not address the issue of how the distal and proximal segments are combined in the transition segments where there is a different weight of radiopaque filler in the two segments being coupled by the transition segment.

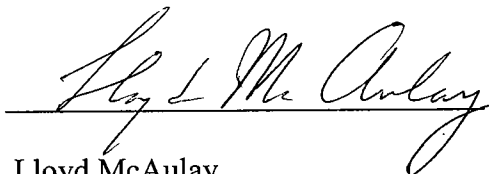
The Examiner does refer to the Parker Patent No. 5,769,830 to show the use of a filler (particle 34 and 35) to provide variable opacity. But the combination of Wang and Parker does not suggest the formation that provides the transition zone as currently claimed by Applicant.

In brief, Applicant has provided an optimum venous access catheter which provides a unique combination of plastic hardness values and filler percentage values. Nothing in the art teaches or leads one to put together this particular combination.

Favorable action is respectfully requested.

The Commissioner For Patents is hereby authorized to charge any additional fees to
Deposit Account No. 03-3415.

Respectfully submitted,

A handwritten signature in cursive script, reading "Lloyd McAulay", written over a horizontal line.

Dated:

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